

**MINUTES OF THE BOARD OF HEALTH OF THE CITY OF CUDAHY HELD AT THE MUNICIPAL
BUILDING, 5050 SOUTH LAKE DRIVE, CUDAHY, WI ON TUESDAY,
October 26, 2010**

ROLL CALL

The meeting was called to order at 6:15 PM by Chairman Ponec with the following members present: Gerald Ponec, Dr. Johnson, Dr. Sherman, Robert Grams, Lynn Damitz , Carol Wantuch and Neal White. Absent and excused: Rebecca Owen and Ald. Mary Schissel.

Also in attendance at the beginning of the meeting was Frank Miller, Superintendent of the Cudahy Water Utility and Marty Zabkowicz, Environmental Health Specialist.

OPENING STATEMENT

The proper opening statement was read.

APPROVE MINUTES

Moved by Dr. Johnson, seconded by Neil White to approve the minutes of the September 28, 2010 meeting. All voting in favor.

DISCUSSION OF THE FLUORIDATION OF CUDAHY WATER

Superintendent Miller presented the Board with a comprehensive overview of the Cudahy Water Utility concerning the use of fluoride.

Highlights included:

- Cudahy has added fluoride to the City water since 1966.
- The amount of fluoride added to the water is 1.01 ppm and is closely monitored and measured by a computer.
- The cost of purchasing fluoride is approximately \$22,000 per year.
- Fluoride occurs naturally in small amount in Lake Michigan water and also in ground water throughout the State.
- Most Wisconsin municipalities add fluoride to their community drinking water. The chemical fluoride used in municipal water is approved by NSF (National Science Foundation) rather than the FDA.
- Most medical and dental professionals believe that the benefits of adding fluoride to community drinking water far outweigh the negatives associated with it.
- The current fluoride compound that is used by the Cudahy Water Utility is being used by most water utilities throughout the State. Other forms of fluoride would not meet the needs of the Water Utility due to the costs involved.
- Low income families have difficulty finding dental care because of a lack of dental insurance or because few dentists will accept Medicaid. These families benefit greatly from the addition of fluoride in the water to help to prevent dental caries and other dental diseases.

Letters about the use of fluoride in community drinking water were received and distributed to the Board members from Dr. LeMay, Wisconsin Department of Health Services; Dr. Lobb, Dean of Marquette School of Dentistry and Dr. Shimeta, President of the Greater Milwaukee Dental Association and will be included in these minutes.

Moved by Dr. Sherman, seconded by Robert Grams to recommend the continuation of fluoride in the Cudahy drinking water. All voting in favor.

CONTRACT WITH THE SCHOOL DISTRICT OF CUDAHY FOR THE PROVISION OF NURSING SERVICES

The Health Officer and the Superintendent of Schools, Jim Heiden have been discussing the possibility of a Public Health Nurse providing approximately 600 hours/school year of nursing service for students with special health care needs only. This Public Health Nurse would continue to be a full-time employee of the Health Department. The School District would reimburse the Health Department for salary and benefits incurred during those 600 hours. There would be a written contract and the latest version was reviewed by the Cudahy City Attorney. This arrangement will enhance the status of the 2011 Health Department budget. More importantly, it will strengthen the working relationship between the City and the School District.

Moved by Lynn Damitz, seconded by Dr. Johnson to proceed with the contract with the School District. All voting in favor.

2011 HEALTH DEPARTMENT BUDGET

Board members received the latest version of the proposed 2011 Health Department budget. The budget will increase by 2.14% and 2011 revenues are projected to increase by 14.01%. The increased revenue reflects the reimbursement for nursing services from the School District. The 2010 revenues are currently at 125% of what was projected for the year, primarily due to increased reimbursement for H1N1 activities.

HEALTH OFFICER REPORT

1. Animal Bites

As of today, the Health Department has investigated 35 animal bites for 2010. (In 2006, the Department investigated a total of 35 bites for the year.)

2. Flu Clinic

The Cudahy Flu Clinic was held on October 12, 2010 in the Council Chambers. This year only 346 flu shots and 3 pneumonia shots were given. This reflects a decrease of 42% from 2009 clinics. In fact the amount of flu vaccine given has steadily decreased since 2005. Some of the reasons for this decline is that flu vaccine is available almost everywhere and there is not the urgency to obtain the vaccine as in the past. Decreasing the Flu Clinic times of operation for 2011 will be strongly considered.

The Health Department did collect over 10 boxes of food and toiletries for Project Concern during the Flu Clinic. We did get a thank you note from Project Concern.

3. Emergency Plans for Adult Housing

Carol Wantuch is still waiting to hear whether the Homeland Security grant that she applied for to do emergency training in senior housing complexes has been approved.

4. Immunization Clinics

As of today, the Health Department Immunization Clinics have booked appointments into mid January 2011. Most of these appointments are for school-aged children. With the cooperation of the School District's alerting system, the Health Department did hold an all day Immunization Clinic only for school children in August. Unfortunately only 15 students took advantage of this opportunity.

Moved by Robert Grams, seconded by Dr. Johnson to accept the Health Officer's report. All voting in favor.

OTHER BUSINESS

1. Marty Zabkowicz expressed his appreciation to Carol Wantuch for her dedication to the budget and to the employees of the Health Department.
2. Dr. Sherman noted that he saw a child with pertussis and there is a strong push to have children and adults vaccinated to help prevent this disease.

NEXT MEETING

The next meeting will be on Tuesday, November 32, 2010 at 6:15 PM.

ADJOURN

Moved by Robert Grams, seconded by Dr. Johnson to adjourn (7:15 PM).

All voting in favor.

Respectfully submitted,
Neal White, Secretary

OFFICE OF THE DEAN

MARQUETTE
UNIVERSITY

October 25, 2010

Carol Wantuch, RN, BSN, MS
Health Officer, Cudahy Health Department
5050 South Lake Drive
Post Office Box 100380
Cudahy, WI 53110-6106

Re: Community water fluoridation program, City of Cudahy.

Dear Mrs. Wantuch,

The Marquette University School of Dentistry strongly endorses the use of fluoride in the fight against cavities. Specifically, the School of Dentistry supports the fluoridation of community water to prevent dental caries and remineralize early lesions. Delivered at optimum levels between 0.7 mg/L and 1.2 mg/L, fluoride has been a safe and effective measure to provide the benefits of caries prevention to millions of households in the U.S. at minimum cost. Initially introduced in Grand Rapids, MI, in 1945, optimally fluoridated drinking water now reaches more than 70% of the U.S. population. Recently, the Center for Disease Control has listed community water fluoridation as one of ten great public health achievements of the 20th century, comparable among others to vaccination or the control of infectious diseases. Drinking water fluoridation is endorsed by many health and scientific organizations, including the American Academy of Family Physicians, the American Academy of Pediatrics, The American Council on Science and Health, the American Medical Association, the American Public Health Association, the Head Start Bureau, the Institute of Medicine, the American Dental Association, the International Association for Dental Research, the National Academy of Science, and the Office of the Surgeon General, to name just a few.


The Safe Drinking Water Act ensures that all Americans have access to high quality drinking water. The quality standards for drinking water are set by EPA and tightly implemented by state and community authorities. The metabolism, mechanisms of action, and potential adverse effects of fluoride have been extensively investigated. They are well known, in particular for the concentration range used in community waters. There is no reason to believe that fluoride and fluoride additives at commonly used levels in drinking water are harmful to people, in particular to the unborn, young children, and those with compromised health.

OFFICE OF THE DEAN

Community water fluoridation program, City of Cudahy
October 25, 2010
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Community based measures for caries prevention have become even more important as public health studies have shown that large parts of the U.S. population lack access to professional dental care or caries preventive measures like dental sealants. This concerns in particular people of low socio-economic status. Depriving the economically least fortunate of fluoridated community water would also expose them to a much higher risk of cavities, possibly leading to unnecessary pain, early tooth loss, and ultimately additional costs at the expense of the community. Therefore, we believe that fluoridated drinking water is the best currently available approach to provide caries preventive benefits to as many community members as possible.

Sincerely,


William K. Lobb, DDS, MS, MPH
Dean


Arthur F. Hefti, DDS, PhD
Associate Dean

October 26, 2010

Cudahy Board of Health
5050 S. Lake Drive
Cudahy, WI 53110-6108

Dear Board of Health Members,

It has come to my attention the Cudahy Board of Health will be discussing fluoridation at tonight's meeting.

Fluoridation of community water supplies is considered one of the most significant public health advances of the 20th century and one of the safest, most cost-effective ways to increase overall oral health. Since its introduction more than 65 years ago, fluoridation has dramatically improved the dental health of tens of millions of Americans. Time and again, public opinion polls show an overwhelming majority of Americans support water fluoridation.

Established in 1870, the Wisconsin Dental Association (WDA) is the state's largest organization representing dentistry. The WDA has over 2,900 members statewide (including 10 dentists with practices in Cudahy) who are committed to promoting professional excellence and quality oral health care.

The Center for Disease Control has released the latest statistics on community water fluoridation for the nation on its website (www.cdc.gov/fluoridation/statistics/2008stats.htm). The latest data show that in 2008, 72.4 percent of the U.S. population on public water systems (total of 195.5 million people) had access to optimally fluoridated water.

Community water fluoridation prevents decay in children and adults throughout their lifespan. A review in 2001 by the Task Force on Community Preventive Services reported that water fluoridation reduces tooth decay by 30 – 50 percent in children and adolescents. Also, a 2007 study published in the Journal of Dental Research found that fluoridation prevents about 27 percent of cavities in adults.

We ask you to consider:

- Water fluoridation is the process of adjusting the natural level of fluoride to a sufficient concentration for protection against tooth decay within a range established by the U.S. Public Health Service.
- The maximum reduction in tooth decay occurs when fluoride is available before the teeth erupt (systemically) and after teeth erupt (topically).
- According to the National Cancer Institute, "...optimal fluoridation of drinking water does not pose a detectable cancer risk to humans ..." The American Cancer Society states, "Scientific studies show no connection between cancer rates in humans and adding fluoride to drinking water."

- Water fluoridation contributes much more to overall health than simply reducing tooth decay. It prevents needless infection, pain, suffering and loss of teeth; improves the quality of life and saves vast sums of money in dental treatment costs.

On behalf of the several thousand adults and children living in Cudahy, the WDA and the local Greater Milwaukee Dental Association urge board members to continue fluoridating the city's water system.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Shimeta". The signature is stylized with a large, looped "M" and a cursive "Shimeta".

Dr. Michael Shimeta, President
Greater Milwaukee Dental Association
5820 S. Packard Ave.
Cudahy, WI 53110

Jim Doyle
Governor

Karen E. Timberlake
Secretary



State of Wisconsin

Department of Health Services

DIVISION OF PUBLIC HEALTH

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October 20, 2010

Carol Wantuch
Health Officer, Cudahy Health Department
5050 South Lake Drive
Post Office Box 100380
Cudahy, WI 53110-6106

Dear Ms. Wantuch :

I am writing in regard to the community water fluoridation program in the City of Cudahy. It is my understanding that a concern has been raised to the Cudahy Board of Health regarding the safety and effectiveness of community water fluoridation. I am providing the following information on fluoridation to the Board of Health for their review and consideration.

The fluoridation program in Cudahy has had a significant positive effect on the oral health of all residents since 1966. Community water fluoridation is a safe, effective and well-tested public health program that benefits millions of people worldwide. The Surgeon General of the United States has called water fluoridation one of the most successful public health programs in history. All major health organizations including the World Health Organization, the U.S. Public Health Service, the Centers for Disease Control and Prevention, the American Public Health Association, the American Medical Association, the American Dental Association and the Association of State and Territorial Health Officials give strong endorsements to community water fluoridation. In Wisconsin, a few of the many organizations that support fluoridation include the State Medical Society of Wisconsin, the Wisconsin Public Health Association, the Wisconsin Dental Association, the Wisconsin Oral Health Coalition, the Wisconsin Chapter of the American Academy of Pediatrics and the Wisconsin Academy of Family Physicians. Therefore, it is not only dentists that recommend fluoridation but a wide variety of health professionals including physicians, nurses, toxicologists, chemists, pharmacists and others. These endorsements were obtained after careful consideration and study of the scientific literature.

In response to the posteruptive and topical mechanism of action of fluoride issue, fluoride protects teeth in two ways, both systemically and topically. Systemic fluorides are those ingested into the body. Systemic fluorides can give topical protection because ingested fluoride is present in saliva, which continually bathes the teeth providing a reservoir of fluoride that can be incorporated into the tooth surface to prevent decay. Fluoride also becomes incorporated into dental plaque and facilitates further remineralization. A primary source of systemic fluoride in the United States is fluoridated water.

The American Water Works Association (AWWA), a well-respected water supply industry association, sets standards for all chemicals used in a water treatment plant, including fluoride chemicals. The National Sanitation Foundation (NSF) also sets standards and does product certification for products used in the water industry, including fluoride chemicals. These standards provide for product quality and safety assurance to prevent the addition of harmful levels of contaminants from water treatment chemicals. Pharmaceutical grade fluoride compounds are not appropriate for water fluoridation as they are used in the formulation of prescription drugs.

The ingestion of optimally fluoridated water does not have an adverse effect on bone health. Exposure to fluoride at levels considered optimal for the prevention of dental decay appears to have no significant impact on bone mineral density or risk of bone fracture. In *Bone Health and Osteoporosis: A Report of the Surgeon General* issued in 2004, fluoride is listed as a nutrient that has potentially beneficial effects on bone. The possible association between fluoride and bone cancer has also been studied. The Ad Hoc Subcommittee on Fluoride of the U.S. Public Health Service stated: "Taken together, the two animal studies available at this time fail to establish an association between fluoride and cancer."

Of particular importance in regard to the safety of fluoridation are the results of a year long study by the United States Public Health Service examining the benefits and risks of fluoridation. This study also concludes that water fluoridation is **safe and effective** in preventing dental decay. The following summarizes the study results:

- The Public Health Service should continue to recommend the use of fluoride to prevent dental caries.
- The Public Health Service should continue to support optimal fluoridation of drinking water.

Hundreds of studies carried out in many different countries in the past 50 years have proven the effectiveness of fluoridation. Studies have repeatedly demonstrated that drinking water with the optimal amount of fluoride (1.1 parts per million in Wisconsin) reduces the incidence of tooth decay by approximately 30%. It is a popular misconception that fluoridation helps only children. Adults as well as children benefit from drinking fluoridated water throughout their lives. Several studies show that people in their sixties who have lived all of their lives in areas with sufficient fluoride in the drinking water have much less tooth loss and tooth decay than do adults in non-fluoridated communities.

Extensive studies over the past 50 years have established that individuals whose drinking water is fluoridated show a reduction in dental caries. Fewer caries are associated with fewer abscesses and extractions of teeth and with improved health. The health and economic benefits of water fluoridation accrue to individuals of all ages and socioeconomic groups, especially to poor children.

The Centers for Disease Control and Prevention stated that the fluoridation of drinking water is one of the ten great public health achievements in our country.

I am well aware of some of the anti-fluoridation literature that is available. This literature often misinterprets legitimate research, misquotes the works of scientists, contain fabrications, and uses poorly designed and politically motivated so-called studies.

Please consider the many indirect benefits from the prevention of dental decay, such as reduction in pain, a more positive self image, fewer missing teeth, fewer teeth requiring root canal treatment, reduced need for dentures and bridges, fewer cases of malocclusion aggravated by tooth loss, and less time lost from school or work from dental disorders or visits to the dentist. These intangible benefits are impossible to measure economically and are often taken for granted.

Throughout the world over 320 million people receive the benefits of fluoridation. In the United States, there are approximately 195 million persons served by water supplies whose content has been adjusted to the recommended optimal levels, or whose natural fluoride content is dentally significant for prevention. Because of the value of fluoridation, several of our neighboring states (Minnesota, Illinois and Indiana) actually mandate that community systems fluoridate their water supply. California recently passed a mandatory fluoridation law. In Wisconsin, over 3 million people, or 89% of the population drinking

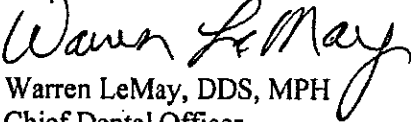
water from a public water system, have the advantages of optimally fluoridated water. There are 282 public water systems in Wisconsin that fluoridate.

Fluoridation has been estimated to have a cost-benefit ratio of about 1:38; that is, every dollar invested in fluoridation saves approximately thirty-eight dollars (\$38.00) in dental expenditures. The economic importance of fluoridation is underscored by the fact that frequently the cost of treating dental disease is paid not only by the affected individual, but also by the general public through services provided by health departments, welfare clinics, health insurance premiums and other publicly supported programs.

On behalf of the Division of Public Health, we certainly encourage Cudahy to continue this valuable prevention program for the benefit of all your residents. Thank you.

Sincerely,

FOR THE DIVISION OF PUBLIC HEALTH

A handwritten signature in black ink, appearing to read "Warren LeMay", written over the typed name and title.

Warren LeMay, DDS, MPH
Chief Dental Officer


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More information about
[community water fluoridation](#)

Oral Health Data Systems

My Water's Fluoride

Safe, effective prevention of tooth decay for people of all ages: Know if your water is optimally fluoridated.

Water System Details[My Water's Fluoride Home](#) > [Search results](#) > **WI 2410169****Water System Name:** CUDAHY**Water System ID Number:** WI 2410169

Total population served by 18659
water system:

Primary county and population served: Milwaukee

Water source: Surface**Water system type:** Community

Does this water system supply fluoridated water? Yes. This water system adjusts the natural fluoride concentration upward to the optimal level for the prevention of dental caries (cavities).
****See Note Below****

Optimal fluoride concentration: 1.10 mg/L

Date fluoridation started: November 1, 1966

This water system is under the jurisdiction of: State of Wisconsin

For further information, contact: Division of Public Health
 1 W. Wilson Street
 PO Box 2659
 Madison, WI 53701-2659
 (608) 266-5152
lemaywr@dhfs.state.wi.us

****Information on this page has been compiled from various sources. Verify information with local utility or health department before making any health based decisions.**

This page was last reviewed by CDC on February 6, 2008. The data presented are the most recent provided by the state.

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Secretary of State calls for debate on fluoridation to improve dental health

Full content of press release provided below

New government funding and guidance to help facilitate local fluoridation schemes

Health Secretary Alan Johnson today urged the NHS to consider fluoridating tap water for those areas with poor dental health to help prevent tooth decay and reduce health inequalities.

£14 million per annum extra funding will be made available over the next 3 years by the Government to those Strategic Health Authorities who, following consultations, find that the local community is in favour of the introduction of fluoridation schemes to improve the dental health.

Academic studies show that oral health is better in areas where tap water is already fluoridated and that the number of children with tooth decay decreases by 15%. In practice the benefits are even greater. For example, children in fluoridated Birmingham have half the cases of tooth decay than children in non-fluoridated Manchester.

To help Strategic Health Authorities assess the level of public support for local fluoridation schemes, the Department is also today issuing revised guidance to ensure local consultations are conducted in a fair and objective way, with benefits and risks being properly considered.

Alan Johnson said:

"Fluoridation is scientifically supported, it is legal, and it is our policy, but only two or three areas currently have it and we need to go much further in areas where dental health needs to be improved. It is an effective and relatively easy way to help address health inequalities - giving children from poorer backgrounds a dental health boost that can last a lifetime, reducing tooth decay and thereby cutting down on the amount of dental work they need in the future.

"But there are people who hold strong views on this subject, so it is important that any proposed schemes are fully and widely consulted on. The guidance published today will help local health bodies to ensure there is an opportunity for everyone to put forward their views. The extra funding I am announcing means that, should local people decide to support fluoridation, SHAs have the resources to implement it."

Fluoride has been added to Birmingham's tap water for over forty years. Its residents are among the 5.5 million UK citizens whose water fluoridation has been already funded by the NHS. A further half a million people live in areas in which fluoride occurs naturally in the water.

This new government funding will allow SHAs in areas of poor dental health to meet the capital cost of fluoridation schemes without depleting funds designated for other health needs and facilities.

Additional notes:

In 2000 the Centre for Reviews and Dissemination at the University of York published a report of a systematic review of the evidence on fluoridation, which concluded that the fluoridation of water increased the number of children without tooth decay by 15 per cent and that children in fluoridated areas had, on average, 2.25 fewer teeth affected by decay than those in non-fluoridated areas.

All water contains some fluoride. About half a million people in this country receive water which is naturally fluoridated at, or about, the optimum level for dental health of one part of fluoride per million of water. A further 5.5 million people receive water where the fluoride content has been increased at the request of the NHS to a level of one part per million. No ill effects to overall health have been identified. Major schemes are in operation in Birmingham and the West Midlands, and also in Tyneside, with the cost borne by the health service rather than water customers.

NHS Evidence - Oral health - Secretary of State calls for debate on fluoridation to improv... Page 2 of 2

Water fluoridation is governed by the Water Industry Act 1991 as amended by the Water Act 2003. The Act gives Strategic Health Authorities (SHAs) the responsibility of deciding the need for fluoridation and consulting locally about any proposals to fluoridate local water supplies.

Keywords
o Fluoridation
o Fluoride
The Chief Dental Officer, Barry Cockcroft, has today issued guidance to SHAs and Primary Care Trusts on the scientific evidence on fluoridation, the planning of new fluoridation schemes, the conduct of public consultations, and the implementation of new schemes.

Topics

Specialist Dentistry Dental Public Health

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Water fluoridation

questions and answers



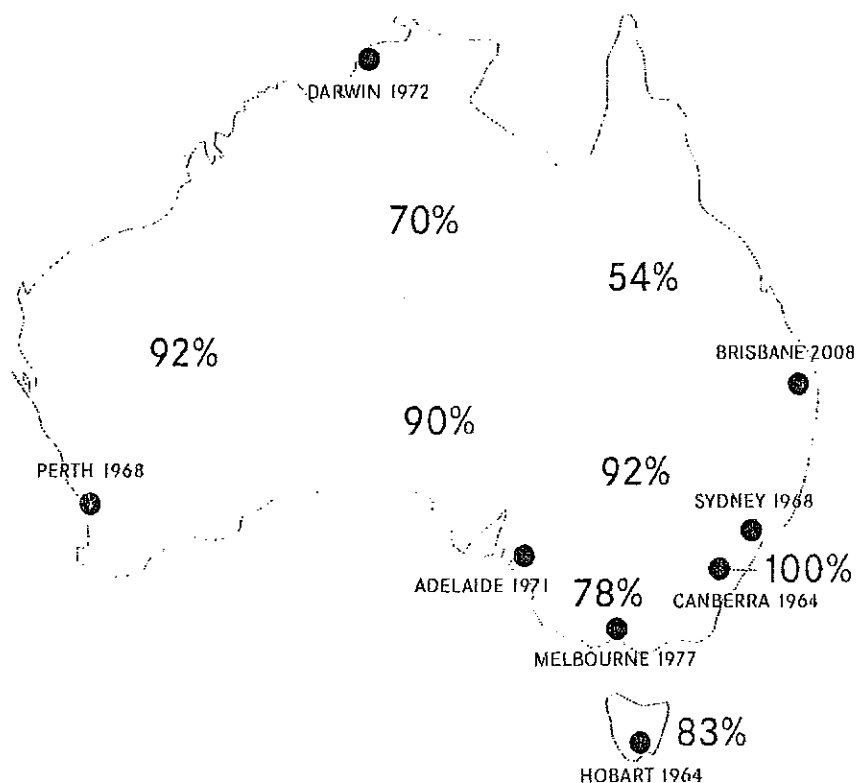
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1. Water fluoridation in Australia

1.1 What parts of Australia have water fluoridation?

Figure 1: Dates of introduction of water fluoridation to Australian capital cities with proportion of each state/territory population receiving fluoridated drinking water in January 2009



Adapted from National Health and Medical Research Council, 2007¹; Queensland Health, 2008².

- The first Australian water fluoridation program commenced in 1953 in Beaconsfield, Tasmania.³ Currently, more than 80 per cent of Australians have access to fluoridated drinking water.^{1,2,4}
- In late 2007, Queensland Health announced that water fluoridation would be rolled out in that state so that by end of 2009, approximately 80 per cent of Queenslanders will have fluoridated drinking water.⁵ Water fluoridation commenced in Brisbane in late 2008.²

1.2 Is my drinking water fluoridated?

Local water authorities can confirm if fluoride is added to a particular supply or visit the Victorian Department of Human Services Water Fluoridation website (<http://www.health.vic.gov.au/environment/fluoridation>) and check your location using the 'Fluoride by postcode' function.

3.7 How does fluoride help prevent dental decay?

There are three main modes of action in which fluoride acts to reduce dental decay. Each is described below, and summarised in table 2.

The first mode of action occurs when teeth are developing in the jaws before they come into the mouth (the 'pre-eruptive phase').¹⁰ When fluoride-containing foods/drinks are ingested, fluoride is absorbed from the gastrointestinal tract and redistributed into developing tooth structure.¹⁰ Such tooth structure is more resistant to acid attack, so when the tooth erupts into the mouth, it is better able to withstand the demineralisation that can occur when sugar-containing foods/drinks are ingested.¹⁰

The second mode of action occurs when fluoride-containing foods/drinks are ingested and fluoride is absorbed from the gastrointestinal tract and redistributed into salivary glands and then into saliva.³⁴ This fluoride-containing saliva then bathes the teeth over extended periods of time, again remineralising tooth structure which has commenced demineralisation.³⁴ This benefit also occurs topically, but does so after the fluoride has been ingested.³⁴

The third mode of action occurs when fluoride-containing foods/drinks wash over teeth during eating and drinking.¹⁰ The fluoride provides an instant benefit as it remineralises tooth structure which has commenced demineralisation.¹⁰ This is done topically.¹⁰

The second and third modes of action occur after the teeth have erupted into the mouth (the 'post-eruptive phase').

Table 2: Fluoride's modes of action

Destination	Source	Main action	Pre/post eruption	Effect type
Incorporation into developing tooth structure	Absorption from gut	Structural alteration of mineral—tooth more resistant to acid attack	Pre-eruption	Structural
Redistribution into saliva	Absorption from gut	Fluoride repairs damage	Post-eruption	Topical
Washes over teeth during eating and drinking	Pre-absorption	Fluoride repairs damage	Post-eruption	Topical

Adapted from WHO, 1994 and 2002.^{19, 21}

Dental decay develops when acid destroys part of the structure of the tooth.¹⁰ The acid is produced from sugar by bacteria in the mouth.¹⁰

Fluoride can limit the amount of acid produced, and can also repair damage before it becomes permanent.²³ A constant supply of a low level of fluoride in the mouth is best for this.²³ In this way, fluoride in the water supply acts like a constant 'repair kit' for teeth.¹⁷

4. Water fluoridation research

-
- 4.1 Has water fluoridation been properly researched?
- In terms of the latest evidence about water fluoridation, the National Health and Medical Research Council (NHMRC) is Australia's peak health body for the achievement of the best possible standards for individual and public health.⁴⁰ In 2007, the NHMRC commissioned a review to evaluate scientific data on fluoridation.¹ The review affirms that water fluoridation remains the most effective and socially equitable means of achieving community wide exposure to the dental decay prevention effects of fluoride.¹
- Water fluoridation has been practiced internationally for over 60 years, in Australia for over 55 years and in Victoria for over 46 years.^{3,23} During this time, the safety and efficacy of water fluoridation has been re-evaluated many times.^{1, 18, 23, 34, 41, 42, 43, 44, 45}
- (see sections 4.3 and 4.5 for discussion on scientific evidence and water fluoridation research)
-
- 4.2 Is all research the same?
- The American Dental Association states the following regarding scientific research:²³
- With the advent of the Information Age, a new type of 'pseudo-scientific literature' has developed. Scientific and technical information is often quoted in the press, printed in a letter to the editor or distributed via the internet. In these contexts, the information can appear as true simply because it is in print. Yet the information is not always based on research conducted according to the scientific method, and the conclusions drawn from research are not always scientifically justifiable. In the case of water fluoridation, an abundance of misinformation has been circulated. Such literature may be misleading, no matter how credible it seems. Therefore, scientific information from all print and electronic sources must be critically reviewed before conclusions can be drawn.*
-
- 4.3 What is the best scientific evidence?
- Because there are now many studies which have investigated water fluoridation, **systematic reviews** of the scientific literature have been conducted to collate and interpret the large amount of data on this subject.
- Senior North American health researchers have discussed the usefulness of systematic reviews:⁴⁶
- Systematic reviews can assist health practitioners and policy makers keep abreast of the latest health and medical research by summarising large amounts of evidence and helping to explain differences among studies on the same question. Systematic reviews are used increasingly to inform medical decision making, assist development of clinical guidelines, plan future research agendas and set policy directions. Systematic reviews may also strengthen the link between best research evidence and optimal health care.*
- In 2000, the United Kingdom's National Health Service Centre for Reviews and Dissemination released *A systematic review of public water fluoridation*, also known as 'The York Review'.⁴⁴
- In 2007, Australia's National Health and Medical Research Council conducted a systematic review and released a public statement entitled *The Efficacy and Safety of Fluoridation 2007*.^{1,47} The recommendation made by the NHMRC, after examining all of the studies on water fluoridation, states:⁴⁷
- Fluoridation of drinking water remains the most effective and socially equitable means of achieving community wide exposure to the caries [decay] prevention effects of fluoride. It is recommended that water be fluoridated in the target range of 0.6 to 1.1 mg/L, depending on climate, to balance reduction of dental caries and occurrence of dental fluorosis.*
-

4.3 *Continued*

Leading health organisations also endorse the safety and effectiveness of water fluoridation. The Centers for Disease Control and Prevention, in the United States of America, has rated water fluoridation as one of the top ten public health achievements of the 20th Century, alongside motor vehicle safety, recognition of the dangers of tobacco and control of infectious diseases.⁴¹

In November 2006, researchers from the World Health Organization (WHO), the World Dental Federation and the International Association for Dental Research met at the Global Consultation on Oral Health Through Fluoride.⁴² The researchers stated:⁴²

Taking account of the scientific evidence, as well as several WHO World Health Assembly Resolutions and other technical reports, the experts reaffirmed the efficiency, cost-effectiveness and safety of the daily use of optimal fluoride.

In 2007, the WHO restated its support for fluoridation of drinking water in its *Global Policy for improvement of oral health*.⁴³

4.4 Does the Victorian Department of Human Services have the latest research on water fluoridation?

The Victorian Department of Human Services has a library of more than 500 water fluoridation articles. This library is updated as new studies are released—usually from peer-reviewed scientific journals. The library also contains public statements from researchers, academics, other health experts and peak health organisations, who have expertise in particular health issues and/or water fluoridation.

4.5 What research supports the benefits of water fluoridation in both children and adults?

The National Health and Medical Research Council (NHMRC) is Australia's peak health body for the achievement of the best possible standards for individual and public health.⁴⁰ In 2007, the NHMRC commissioned a review to evaluate scientific data on fluoridation and released a public statement on *The Efficacy and Safety of Fluoridation*, which reads:⁴⁷

Fluoridation of drinking water remains the most effective and socially equitable means of achieving community wide exposure to the caries [decay] prevention effects of fluoride. It is recommended that water be fluoridated in the target range of 0.6 to 1.1 mg/L, depending on climate, to balance reduction of dental caries and occurrence of dental fluorosis.

(see section 5.2 for discussion on dental fluorosis).

The Australian Research Centre for Population Oral Health, in 2008 presented study results which examined the effectiveness of water fluoridation on children's dental health across four Australian States: Queensland, Victoria, Tasmania and South Australia.⁴⁵ The study also considered a number of other factors: tooth brushing history, use of other fluoride products, water and food consumption, use of infant formula and socioeconomic status.⁴⁵ Over 16,800 children were examined including more than 4,000 Victorian children.⁴⁵ The study found:⁴⁵

- 5–6 year old children who had lived for more than half their lives in areas with optimal water fluoridation had 50 per cent less dental decay in their baby teeth than children who had lived in areas without optimal water fluoridation.
- 12–13 year old children who had lived for more than half their lives in areas with optimal water fluoridation had 38 per cent less dental decay in their adult teeth than children who had lived in areas without optimal water fluoridation.

Water fluoridation also helps protect against dental decay in adults, with studies demonstrating beneficial effects in young children and adults up to 75 years of age.^{18, 23, 41, 48, 49} The Australian Institute of Health and Welfare report, *Australia's dental*

4.5 Continued

generations: the National Survey of Adult Oral Health 2004–06, showed members of the fluoride generation (born after 1970) had about half the level of dental decay that their parents' generation had developed by the time they were young adults.¹³

In addition, adults are susceptible to dental decay in the root surfaces of their teeth, which can become exposed due to periodontal (gum) diseases.²³ Adults living in optimally-fluoridated areas have considerably less root surface dental decay than those living in areas without optimal water fluoridation.^{50, 51}

Water fluoridation gives additional protection against dental decay even if you already brush your teeth with fluoridated toothpaste.^{18, 23} Figure 4 demonstrates this point:

Figure 4: Dental decay experience in 12-year olds in Victoria and Australia, 1955–2005

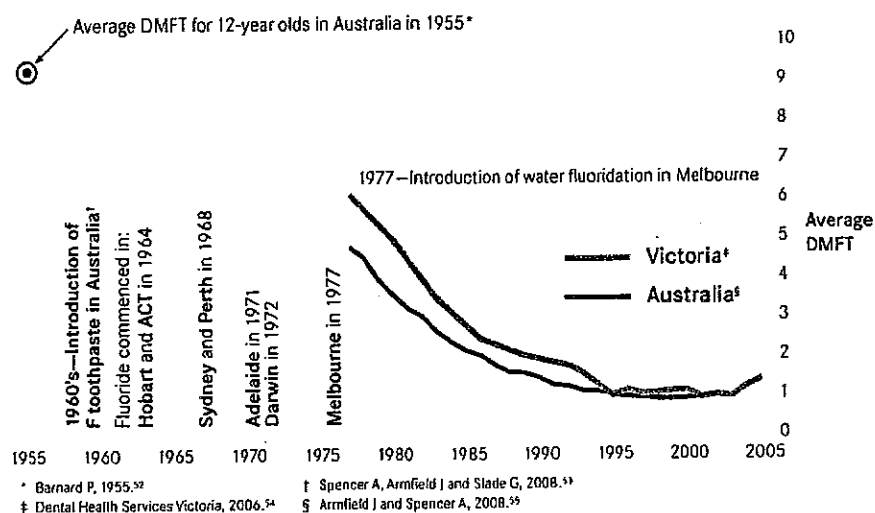


Figure 3 shows average Decayed, Missing and Filled Teeth (DMFT) scores in Victorian 12-year olds when compared with the national average, following the introduction of fluoridated toothpastes and the commencement of water fluoridation in Australian capital cities. Victorian children had significantly higher average DMFT when water fluoridation commenced in Melbourne in 1977, compared to the national average.^{54, 55} Following the introduction of water fluoridation in Melbourne, the average Victorian DMFT fell to the national average by 1995.⁵⁴ Dental experts suggest the recent minor increases in dental decay across Australia are due to the same factors causing increased obesity—namely increased consumption of high sugar food and drinks.⁵⁵ (see section 2.3 for discussion on the DMFT index)

Water fluoridation is of particular benefit to communities of low socioeconomic status, which tend to have higher rates of dental decay and less access to dental treatment and other forms of fluoride exposure.^{18, 34, 41, 56} Water fluoridation reduces the socioeconomic inequalities in dental decay experience, and remains the most socially equitable means of achieving community-wide exposure to the protective effects of fluoride.^{18, 34, 41, 47}

Water fluoridation is a good way to allow everybody in the community to have access to fluoride to help protect teeth against decay.^{1, 47, 56} One of the great advantages of water fluoridation is that it allows everybody to benefit from the protective effect of fluoride, without individuals having to make a conscious effort.¹⁸ It benefits people of all ages, regardless of education, income or access to dental care.^{18, 41, 56}

5. Health Concerns

5.1 Are there any health concerns associated with water fluoridation?

With the exception of dental fluorosis, scientific studies have not found any credible link between water fluoridation and adverse effects.^{41,42,43,47} While the safety of water fluoridation has been confirmed by the World Health Organization and the National Health and Medical Research Council, some community members raise concerns about water fluoridation impacting upon general health.^{7,8,47} These are discussed in detail in the following sections, with reference to the findings of the systematic reviews conducted by the United Kingdom's National Health Service Centre for Reviews and Dissemination in 2000, also known as 'The York Review' and Australia's National Health and Medical Research Council in 2007.^{1,44}

5.2 Dental fluorosis

Dental fluorosis is altered formation of tooth enamel resulting from excessive fluoride ingestion during the period of tooth development, usually from birth to approximately six to eight years of age.²¹

In its mildest (and most common) form it may manifest as barely noticeable whitish striations, while more severe forms involve confluent pitting and staining of the dental enamel.^{23,57}

Determining the exact level of dental fluorosis within a community is difficult, as there are numerous other causes of enamel defects that may resemble dental fluorosis.^{23,58,59}

Points to note about dental fluorosis include:^{23,57,58,59}

- It is usually barely noticeable, and appears as very fine pearly white lines or flecks on the teeth;
- It cannot develop after the teeth are fully formed;
- It also occurs in areas without water fluoridation;
- Mottled teeth should not be called dental fluorosis if fluoride is not the cause (other causes of mottled teeth include medications, injury to the teeth or childhood infections).

Since the mid 1990s, the prevalence of dental fluorosis in Australia has markedly reduced, mainly attributable to the use of low-fluoride toothpastes in young children, and awareness raising of appropriate toothpaste use by children.^{18,60}

Reducing the risk of dental fluorosis, while at the same time reducing the risk of dental decay, can be accomplished by following these oral hygiene guidelines:⁶⁰

- discouraging ingestion of toothpaste by children
- cleaning children's teeth without toothpaste until the age of 18 months, unless otherwise recommended by a health professional
- using only a pea-size amount of low-fluoride toothpaste, smeared over the toothbrush, between 18 months and five years of age (inclusive), unless otherwise recommended by a health professional
- using fluoride mouth rinses in children six years of age and older
- spitting out and not swallowing toothpaste and not rinsing.
- ceasing the use of fluoride supplements, drops and tablets, whether the water supply is fluoridated or not (see section 2.7 for discussion on fluoride tablets).

Dental professionals will determine suitability for additional fluoride therapies.¹⁸

5.3 Allergy

The weight of scientific evidence indicates that optimal levels of fluoride in water fluoridation programs do not cause allergic reactions or allergy-like symptoms.^{1,41} Fluoride is an inevitable component of all diets due to its presence in common foods.^{21, 41} Individuals believing that allergy symptoms are related to fluoridated water are essentially claiming an effect from an incremental increase of fluoride, not its presence versus its absence.⁴²

According to medical specialists from the Department of Allergy, Immunology and Respiratory Medicine at the Alfred Hospital in Melbourne, no clinical or scientific evidence exists to confirm fluoride causes allergies or affects immunity at the optimal 1 mg/L.⁴³ Specifically, they state:⁴³

... during the last 25 years, whether in Melbourne or in the UK, we have never seen a patient with any respiratory symptoms nor any allergy-like symptoms that could be attributed to fluoride 1ppm [1 mg/L] as in our fluoridated water.

5.4 Skeletal fluorosis

Skeletal fluorosis occurs in individuals with excessively high levels of fluoride exposure, and is endemic in several parts of the world including India, China, parts of the Middle East and Africa, where water supplies have fluoride levels higher than those recommended by the World Health Organization.²²

Skeletal fluorosis can also occur in workers with occupational exposure.²² It is a condition characterised by bone pain, joint stiffness and other arthritic symptoms, as a result of excessive incorporation of fluoride into bone.²²

While it is common in some developing countries, it is extremely rare in the developed world.⁴⁸

In the six-year period between 98–99 and 2004–05, only three cases of skeletal fluorosis were identified from hospital data in Australia.⁴⁴ From the Victorian Admitted Episodes Dataset for public hospitals in 2005–06, there were no cases of skeletal fluorosis out of more than 1.3 million hospital admissions.⁴⁵

5.5 Osteoporosis, arthritis and fractures

Fluoride has been used to treat osteoporosis.⁴⁶ However, studies specifically examining the effectiveness of water fluoridation on increasing bone mineral density or decreasing fractures have yielded conflicting results.³⁴

The National Health and Medical Research Council in 2007 concluded that there is no clear association between fluoridation and hip fractures or other fractures.¹

Optimal water fluoridation is safe in terms of any effect on bone mineral density and is endorsed by Osteoporosis Australia and Arthritis Australia, which states:^{47, 48}

There is no credible evidence, or even theory, to implicate water fluoridation in the cause of any type of arthritis.



National Association of County & City Health Officials

The National Connection for Local Public Health

98-08

STATEMENT OF POLICY

Community Water Fluoridation

Policy

The National Association of County and City Health Officials (NACCHO) recognizes the public health benefits of community water fluoridation for preventing dental decay and encourages communities to fluoridate water supplies to levels optimal for protection against tooth decay.

NACCHO supports the development of policies that address social injustices that contribute to the disproportionate burden of disease among underrepresented, low-income, and socially disadvantaged populations.

Justification

Fluoride is a naturally occurring element, and adjusting the fluoride content of community water supplies is the single most effective and safe public health measure to prevent tooth decay and to improve oral health throughout one's lifespan.¹ Community water fluoridation is a public health measure that benefits individuals of all ages and socioeconomic groups, especially those without access to regular dental care.²

The Centers for Disease Control and Prevention and the World Health Organization recommend the fluoride concentration for all public drinking water be adjusted to between 0.7-1.2 parts per million for effective prevention of tooth decay.³ Recent statistics show that the percentage of the United States population served by public water supplies who receive water with optimal fluoride levels for preventing decay increased from 62 percent in 1992 to 69 percent, or 184 million persons, in 2006.⁴ As of May, 2005, 44 of the 50 largest cities in the United States add measured fluoride in their water supplies.⁵

In the United States, community water fluoridation has been recognized as one of 10 great achievements in public health of the twentieth century. It is an ideal public health method because it is effective, eminently safe, and inexpensive and this method requires no cooperative effort or direct action and does not depend on access or availability of professional services.⁶

The use of water fluoridation continues to be one of the most cost-effective prevention measures to reduce the burden of dental decay in the population. Water fluoridation costs approximately as much as one dental filling per person per lifetime. However, it prevents 50 percent of future tooth decay.⁷ Community water fluoridation is equitable because the entire population benefits regardless of financial resources. Fluoridation helps to lower cost of dental care and dental insurance and helps residents retain their teeth throughout their lifetimes.⁸



Public Health
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Record of Action

Adopted by NACCHO Board of Directors

September 23, 1998

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